IN THE CLAIMS

1. (Original) A method for examining the interior material of an object from a surface of an object, such as a pipeline or a human body, using ultrasound having a frequency of at least 100 KHz, wherein the ultrasound is supplied to the interior material of the object, characterized in that reflections and/or diffractions of the ultrasound from the interior material of the object are received using ultrasonic receivers which are acoustically coupled to the surface of the object at positions which are distributed in two dimensions of the surface of the object, at different points in time or not, wherein, with each of the feelers, a receiving signal is generated, wherein the receiving signals are processed in combination in order to determine, according to the principle of inverse wave field extrapolation, where in the interior material of the object reflections and/or diffractions occur.

2. (Original) A method according to claim 1, characterized in that the ultrasonic receivers are arranged relative to each other according to a unidimensional array, wherein the unidimensional array is moved along the surface in a known manner for obtaining receiving signals coming from the ultrasonic receivers distributed in two dimensions over the surface.

3. (Original) A method according to claim 1, characterized in that the ultrasonic feelers are arranged relative to each other according to a two-dimensional array.

4. (Currently Amended) A method according to ~~any one of the preceding claims~~ claim 1, characterized in that the ultrasound is supplied to the object such that a space comprising the interior material to be examined is completely filled with the ultrasound.

5. (Currently Amended) A method according to ~~any one of the preceding claims~~ claim 1

[[-3]], characterized in that the ultrasound is supplied to the object such that a space comprising the interior material to be examined is scanned with an ultrasound beam, wherein the receiving signals of reflections and/or diffractions of the ultrasound from the completely scanned space are processed in order to determine, according to the principle of inverse wave field extrapolation, where in the interior material of the object reflections of the ultrasound occur.

6. (Currently Amended) A method according to ~~any one of the preceding claims~~ claim 1, characterized in that it is determined, according to the principle of inverse wave field extrapolation, in which direction said reflections and/or diffractions occur.

7. (Currently Amended) A method according to ~~any one of the preceding claims~~ claim 1, characterized in that the ultrasound is supplied to the object in a pulsed manner.

8. (Currently Amended) A method according to ~~any one of the preceding claims~~ claim 1, characterized in that the ultrasound is supplied to the object using ultrasonic feelers, which ultrasonic feelers also form ultrasonic receivers for receiving the reflections and/or diffractions.

9. (Currently Amended) A method according to ~~any one of claims~~ claim 1 [[-7]], characterized in that the ultrasound is supplied to the object using at least one ultrasonic transmitter, which ultrasonic transmitter differs from the ultrasonic feelers.

10. (Currently Amended) A method according to ~~any one of the preceding claims~~ claim 1, characterized in that the at least one ultrasonic transmitter and the ultrasonic receivers are arranged relative to each other such that a transmission of the ultrasound through the interior

of the object is measured as well.

11. (Currently Amended) A method according to ~~any one of the preceding claims~~ claim 1, characterized in that the receiving signals are processed in real time.

12. (Currently Amended) A method according to ~~any one of the preceding claims~~ claim 1, characterized in that the processing of the receiving signals is carried out such that the result of the processing can be imaged on a display.

13. (Original) A method according to claim 12, characterized in that a three-dimensional image of at least a part of the interior material of the object is imaged on the display.

14. (Currently Amended) A method according to claim 4 [[or 5]], characterized in that a three-dimensional image of the material in the space is imaged on a display.

15. (Currently Amended) A method according to ~~any one of the preceding claims~~ claim 1, characterized in that a weld of a pipeline is examined.

16. (Currently Amended) A method according to ~~any one of the preceding claims~~ claim 1, characterized in that a wall of a pipeline is examined.

17. (Currently Amended) A method according to ~~any one of the preceding claims~~ claim 1, characterized in that a human body is examined.

18. (Original) A system for examining the interior material of an object, such as a

pipeline or a human body, from a surface of an object using ultrasound having a frequency of at least 100 KHz, wherein the system is provided with at least one transmitter for supplying the ultrasound to the interior material of the object, a plurality of ultrasonic receivers for receiving reflections and/or diffractions of the ultrasound from the interior material of the object, and signal-processing means for processing receiving signals coming from the respective ultrasonic receivers, characterized in that the system is arranged such that, during use, the ultrasonic receivers are acoustically coupled to the surface of the object at positions which are distributed in two dimensions of the surface of the object, at different points in time or not, wherein, during use, a receiving signal is generated with each of the ultrasonic receivers, wherein the signal-processing means are arranged to process receiving signals coming from the ultrasonic receivers in combination according to the principle of inverse wave extrapolation in order to determine where in the interior material of the object reflections and/or diffractions of the ultrasound occur.

19. (Original) A system according to claim 18, characterized in that the ultrasonic receivers are arranged relative to each other according to a unidimensional array, wherein the system is arranged to move the unidimensional array along the surface during use for obtaining receiving signals coming from the ultrasonic receivers which are distributed in two dimensions over the surface.

20. (Original) A system according to claim18, characterized in that the ultrasonic feelers are arranged relative to each other according to a two-dimensional array.

21. (Currently Amended) A system according to ~~any one of the preceding claims~~ claim 18 [[-20]], characterized in that the system is arranged to supply the ultrasound to the object during use such that a space comprising the interior material to be examined is completely

filled with the ultrasound.

22. (Currently Amended) A system according to ~~any one of the preceding claims~~ claim 18 [[-20]], characterized in that the system is arranged to supply the ultrasound to the object during use such that a space comprising the interior material to be examined is scanned with an ultrasound beam, wherein the receiving signals of reflections and/or diffractions of the ultrasound from the completely scanned space are processed in order to the determine, according to the principle of inverse wave extrapolation, where in the interior material of the object reflections and/or diffractions of the ultrasound occur.

23. (Currently Amended) A system according to ~~any one of the preceding claims~~ claim 18 [[-20]], characterized in that the signal-processing means are arranged to determine, according to the principle of inverse wave extrapolation, in which direction said reflections and/or diffractions occur.

24. (Currently Amended) A system according to ~~any one of the preceding claims~~ claim 18 [[-23]], characterized in that the system is arranged to supply the ultrasound to the object in a pulsed manner.

25. (Currently Amended) A system according to ~~any one of the preceding claims~~ claim 18 [[-24]], characterized in that the system is provided with ultrasonic feelers which can each function as the at least one transmitter as well as one of the receivers.

26. (Currently Amended) A system according to ~~any one of the preceding claims~~ claim 18 [[-24]], characterized in that the at least one transmitter on the one hand and the

receivers on the other hand are accommodated in mutually different housings.

27. (Currently Amended) A system according to ~~any one of the preceding claims~~ claim 18 [[-26]], characterized in that the ultrasonic transmitter and the ultrasonic receivers are arranged relative to each other such that, during use, the transmission of the ultrasound through the interior of the object is measured as well.

28. (Currently Amended) A system according to ~~any one of the preceding claims~~ claim 18 [[-27]], characterized in that the system is arranged to process the receiving signals in real time using the signal-processing means.

29. (Currently Amended) A system according to ~~any one of the preceding claims~~ claim 18 [[-28]], characterized in that the system is further provided with a display forimaging the result of the receiving signals processed by the signal-processing means.

30. (Original) A system according to claim 29, characterized in that the system is arranged to image a three-dimensional image of at least a part of the interior material of the object on the display.

31. (Currently Amended) A system according to claim 21 [[or 22]], characterized in that the system is arranged to image a three-dimensional image of the material in the space on a display.